

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2011-37

DATE:

From: 15 JUN 2011 to: 06 JUL 2011

VESSEL:

F/V Viking Storm

PROJECT(S):

High Seas Salmon
Book 1 of 2

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division
North Saanich, BC, Canada

WaterProperties.ca

CTD issues with SBE 25 (unit #0404). June 16: no casts recorded (8 casts done).
Issues connecting to unit initially when trying to upload. June 17: Casts recording on
unit but unable to upload and/or convert.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 1 of 43

Month JUNE				Year 2011			Ship F/V Viking Storm				Cruise ID 2011-37				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
16	JF01	13:01	BE	CTD		1	48 17.089	123 39.248	175	150					JF - Berry Ag. Bot @ 10m: Nuts & chl.
		13:09	BE				48 17.058	123 39.407	181						
		13:13	BE	BONGO		2	48 17.05	123 39.412	181	150					
		13:23	BE				48 17.055	123 39.438	181						
		13:35	BE	TRAWL		3	48 17.306	123 40.775	172	Ø					SURFACE TOW
		14:05	BE			4	48 18.674	123 44.984	92						
16	JF02	14:29	BE	BONGO		4	48 20.38	123 51.01	127	120					JF - Otter IT.
		14:45	BE				48 20.39	123 51.245							
		14:51	BE	CTD		5	48 20.41	123 51.56	127	120					Bot @ 10m: Nuts & chl
		14:56	BE				48 20.44	123 51.492	125						
		15:16	BE	TRAWL		6	48 21.049	123 51.600	135	15					15m - Tow
		15:46	BE				48 21.915	123 59.742	113						
16	JF03	16:14	BE	CTD		7	48 23.415	124 04.458	95	90					JF - Ruck JEROME Bot @ 10m: Nuts & chl
		16:19	BE				48 23.46	124 04.53							
		16:21	BE	BONGO		8	48 23.48	124 04.565	90	80					
		16:26	BE				48 23.55	124 04.725	86						
		16:39	BE	TRAWL		9	48 23.92	124 06.19	90	Ø					SURFACE TOW
		17:09	BE				48 25.66	124 10.24	50						

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

From the FICA - 1/2 mi SWAN, OVERCAST BUT BRIGHT, RIPPED SEAS

JF01: No CTD cast recorded.

JF02: No CTD cast recorded.

JF03: No CTD cast recorded.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 2 of 43

Month <u>JUNE</u>		Year <u>2011</u>		Ship <u>R/V Viking Storm</u>		Cruise ID <u>2011-37</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
16	JF04	17:25	BE	Bongo		10	48 25.6	124 11.9	90	80					JF - MADAGASCAR R.
		17:29	EU				48 25.614	124 11.975							
		17:31	BE	CTD		11	48 25.62	124 12.42	90	80					Bot @ 10m: Nuts & chl
		17:36	EU				48 25.63	124 12.45							
		17:49	BE	TRAWL		12	48 25.78	124 13.54	95	75					15 m. Trawl
16	JF05	18:19	EU				48 26.62	124 17.99							125 fm WARP
		18:42	BE	CTD		13	48 28.36	124 20.54	82	70					JF - off Somalio
		18:48	EU				48 28.39	124 20.54							Bot @ 10m: Nuts & chl
		18:49	BE	Bongo		14	48 28.40	124 20.56	79						
		18:53	EU				48 28.42	124 20.59							
16	JF06	19:01	BE	Trawl		15	48 28.61	124 21.37	84						Surface
		19:31	EU				48 30.17	124 23.41	75						
		20:17	BE	Bongo		16	48 32.14	124 30.29	37	30					JF - Port Renouveau
		20:19	EU				48 32.145	124 30.25	34						
		20:22	BE	CTD		17	48 32.15	124 30.22	33	25					Bot @ 10m: Nuts & chl
16	JF06	20:23	EU				48 32.15	124 30.17	31						
		20:31	BE	TRAWL		18	48 32.2	124 30.82	42						SURFACE
		20:01	EU				48 32.59	124 33.44	43						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

JF04: No CTD cast recorded

JF05: No CTD cast recorded

JF06: No CTD cast recorded

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 3 of 43

Month <u>June</u>		Year <u>2011</u>		Ship <u>FV Viking Storm</u>		Cruise ID <u>2011-37</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
16	V101	21:54	BE	CTD		19	48 33.90	124 41.86	71	60					VI - CANNANAN R. Bot @ 10m: Nutschl
		21:57	EW				48 33.89	124 41.61	—						
		22:00	BE	Bouge		20	48 33.88	124 41.47	71	60					
		—	—	—			—	—	—	—					
		22:14	BE	TRAWL		21	48 33.91	124 42.18	75	15					15m Tow. 125m WARP
		22:44	EW				48 34.37	124 44.50	107						
	V102	23:37	BE	Bouge		22	48 36.02	124 53.04	61	50					VI - CRO - 0.05K
		23:41	EW				48 35.99	124 53.05	61						
		23:43	BE	CTD		23	48 35.98	124 53.03	61	50					Bot @ 10m: Nutschl
		23:46	EW				48 35.96	124 52.96							
		23:59	BE	TRAWL		24	48 36.01	124 53.88	60	0					SURFACE TOW. 75m WARP.
		00:29	EW				48 36.59	124 57.23	64						
17	V101	13:00	BE	CTD		25	48 57.96	125 06.80	91	85					⊗ VI - BACKLASH IMPERIAL PASS C.
		13:05	EW				48 57.95	125 06.84	91						
		13:06	BE	Bouge		26	48 57.94	125 06.86	91	80					
		13:11	EW				48 57.93	125 06.89							
		13:22	BE	TRAWL		24	48 54.64	125 06.87	91	0					SURFACE TOW.
		13:52	EW				48 55.83	125 09.41	85						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 =

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

VI01: No CTD cast recorded

VI02: No CTD cast recorded

⊗ IVI01 - CTD Bot @ 10m: Nuts & chl

⊗ IVI01: * hex saved to computer, unable to convert. Seeking help for this issue. (17 JUN 11)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 4 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>FV Viking Storm</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
17	VI02	1418	BE	Bongo		28	48 54.48	125 12.75	95	80					5m Tow
		1422	EN				48 54.49	125 12.79							20m - 135, 1m50000000
		1425	BE	CTD		29	48 54.49	125 12.82	95	85					Bot @ 10m: Nuts & chl
		1430	EN				48 54.48	125 12.84							
		1441	BE	Trawl		30	48 53.84	125 13.30	95						15m Tow 125 fms
17	VI03	1511	EN				48 52.05	125 13.59							
		1555	BE	CTD		31	48 49.91	125 16.33	91	80					VI03 - 1000 135.
		1600	EN												(*) Note → Bot @ 10m: Nuts & chl
		1548	BE	Bongo		32	48 50.28	125 16.08							
		1608	EN				48 49.94	125 16.36	91	80					
17	VI04	1608	BE	Trawl		33	48 49.45	125 16.41	90						SURFACE
		1638	EN				48 47.55	125 17.5	87						
		1723	BE	Bongo		34	48 47.60	125 22.16	87	80					
		1728	EN				48 47.64	125 22.19							
		1717	BE	CTD		35	48 47.66	125 22.20	87	75					Bot @ 10m: Nuts & chl
17		1721	EN				48 47.69	125 22.23							
		1740	BE	Trawl		36	48 47.28	125 23.34	82	30					30m Tow 50 fms
		1810	EN				48 45.81	125 26.28							

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

Scott Rose C# 250-858-2880

This page is for any notes or observations

VI02

⊗ CTD cast saved on SBE 25 (cast 0), unable to upload hex to computer (17 JUN 11). Seeking help for this issue.

VI03

⊗ Bongo conducted before CTD, consecutive numbers not changed.
CTD cast saved on SBE 25 (cast 1), unable to upload hex to computer.

VI04

⊗ CTD conducted before Bongo, consecutive numbers not changed.
CTD cast saved on SBE 25 (cast 2), unable to upload hex to computer.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 5 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>FV. Viking Spar</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
17	V05	19:03	BE	Bongo		37	48 42.15	125 34.24	130	120					
		19:10	EN				48 42.22	125 34.26	128						
		19:13	BE	Risker		38	48 42.24	125 34.26	130	10					Bot @ 10m: Nuts & chl
		19:21	BE	Trawl		39	48 41.86	125 34.86	126						
		19:51	EN				48 40 27.6	125 37.36	101						SURFACE TOW
17	V06	20:56	BE	Risker		40	48 35.65	125 42.51	61	10					Bot @ 10m: Nuts & chl
		20:59	BE	Bongo		41	48 35.62	125 42.53	62	50					
		21:03	EN				48 35.7	125 42.52	61						
		21:11	BE	Trawl		42	48 35.53	125 43.18	63						SURFACE TOW
		21:41	EN				48 34.74	125 46.30	73						
17	V07	22:39	BE	Bongo		43	48 29.9	125 51.29	103	90					
		22:43	EN				48 29.95	125 51.24							
		22:45	BE	Risker		44	48 29.96	125 51.26	102	10					Bot @ 10m: Nuts & chl
		22:54	BE	Trawl		45	48 29.36	125 51.38	112						5 m Tow
		23:27	EN				48 27.16	125 51.78							

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

— FART CARM, LOW SURGE, PARTLY CLOUDY PARTLY SUNNY, RIPPED SEAS

— * CAN NOT DOWNLOAD DATA FROM SBERS, CTD OPERATIONS WILL BE RESERVED FOR TRANSECTS,
AND NOW WE'LL ONLY BE TAKING WATER SAMPLES WITH "NISKIN" BOWTIE AT
"OPPORTUNISTIC" STATIONS, AND NO CTD CASTS WILL BE MADE.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 6 of 43

Month <i>June</i>		Year <i>2011</i>		Ship <i>RV Viking Storm</i>		Cruise ID <i>2011-37</i>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
18	VI08	0:22	BE	N. skan.		46	48 24.34	125 57.82	297	10					Bot @ 10m: Nuts & chl
		0:23	BE	Bongo		47	48 24.36	125 57.83	306	150-					
		0:32	BE				48 24.42	125 54.73	311						
		0:41	BE	Trawl		48	48 24.07	125 58.20	318						75f water
		1:11	BE				48 22.22	125 00.36	452						
→ END OF DAY															
18	VI09	13:00	BE	Niskin		49	48 52.7	126 22.05	160	10					VI-off Towing
		13:00	BE	Bongo		50	48 52.72	126 22.05	160	150					Bot @ 10m: Nuts & chl
		13:08	BE				48 52.62	126 22.08							
		13:17	BE	Trawl		51	48 53.01	126 21.65	157						SURFACE TOW 75m
		13:47	BE				48 54.60	126 19.65	141						
18	VI10	1424	BE	Bongo		52	48 57.48	126 16.00	118	105					15m Tow 125m
		1429	BE				48 57.43	126 16.04	118						
		1437	BE	Niskin		53	48 57.49	126 16.06	118	10					Bot @ 10m: Nuts & chl
		1449	BE	Trawl		54	48 57.97	126 15.30	113	15					VI-off Towing
		1519	BE				48 59.40	126 12.62	90						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

U109 - EAST CANAL, LOW SWELL, OVERCAST

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 7 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>FV Viking</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
18	VE 11	15:51	BE	Mission		55	49 1.33	126 9.55	68	10					Bot @ 10m: Nutschl
		15:53	BE	Bongo		56	49 1.32	126 9.58	68	55					
		15:56	EW				49 1.33	126 9.58							
		16:09	BE	Trawl		57	49 1.79	126 8.90	66	Ø					surface 75 fm warp
		16:39	EW				49 3.04	126 6.3	36						
18	VE 12	16:59	BE	Bongo		58	49 04.17	126 04.61	50	40					
		17:02	EW				49 04.16	126 04.64							
		17:04	BE	Mission		59	49 04.15	126 04.65	50	10					Bot @ 10m: Nutschl
		17:05	EW				49 04.15	126 04.65							
		17:14	BE	Trawl		60	49 4.51	126 04.05	51	Ø					surface 75 fm
		17:44	EW				49 5.23	126 1.23	43						
= END OF DAY															
19	EPO1	13:02	BE	CTD		61	49 20.45	126 32.84	46	35					Bot @ 10m: Nutschl
		13:04	EW				49 20.42	126 32.79	45						
		13:09	BE	Bongo		62	49 20.41	126 32.77	46	35					
		13:08	EW				49 20.39	126 32.76	46						
		13:18	BE	Trawl		63	49 20.04	126 32.37	52	Ø					surface 75fm warp
		13:48	EW				49 19.05	126 36.37	83						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

HW STORM APPROACHING, $\frac{1}{2}$ M SWELL, SCATTERED WHITE CAPS,

1 M SWELL RIPPED SEAS
EFO1 - KIRSTIN & RASHECH (David Wilson) SBE 19+ serial #4076
IS NOW BEING USED HERE AND FOR ALL SUBSEQUENT CTD CASTS.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 8 of 43

Month <i>June</i>				Year <i>2011</i>			Ship <i>RV. Virginia Storm</i>			Cruise ID <i>2011-37</i>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
19	EP02	1410	BE	Bongo		64	49 18.80	126 37.03	90	80					
		1415	BE				49 18.78	126 37.03							
		1420	BE	CTD		65	49 18.77	126 36.99	90	80					Bot @ 10m: Nuts & chl
		1425	BE				49 18.73	126 36.93							
		1436	BE	Trawl		66	49 18.35	126 37.81	98	15					15m Tow
		1506	BE				49 17.11	126 40.78							
19	EP03	1521	BE	CTD		67	49 16.64	126 41.45	111	100					Bot @ 10m: Nuts & chl
		1527	BE				49 16.63	126 41.38							
		1530	BE	Bongo		68	49 16.63	126 41.38	111	100					
		1536	BE				49 16.59	126 41.34							
		1544	BE	Trawl		69	49 16.32	126 41.97	113	Ø					SURFACE TOW
		1614	BE				49 15.12	126 44.87	117						
19	EP04	1626	BE	Bongo		70	49 14.85	126 45.48	118	105					
		1633	BE				49 14.83	126 45.48							
		1637	BE	CTD		71	49 14.82	126 45.49	118	105					Bot @ 10m: Nuts & chl
		1643	BE				49 14.78	126 45.49							
		1653	BE	Trawl		72	49 14.30	126 46.30	120	30					30 m
		1723	BE				49 12.77	126 49.02	135						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 9 of 43

Month <i>June</i>				Year <i>2011</i>			Ship <i>R.V. Viking Storm</i>				Cruise ID <i>2011-37</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
19	EP05	17:41	BE	CTD		73	49 12.17	126 49.82	143	130					Bot @ 10m: Nuts & chl
		17:50	BE				49 12.16	126 49.84	142						
		17:51	BE	Bongo		74	49 12.15	126 49.83	143	130					
		17:59	BE				49 12.14	126 49.82	143						
		18:21	BE	Trawl		75	49 12.3	126 51.36	145						SURFACE
		18:51	BE				49 10.46	126 54.11	181						
19	EP06	19:05	BE	Bongo		76	49 10.07	126 54.74	190	150					
		19:15	BE				49 10	126 54							
		19:16	BE	CTD		77	49 9.9	126 54.84	195	180					Bot @ 10m: Nuts & chl
		19:24	BE												
		19:32	BE	Trawl		78	49 9.7	126 55.62	212	15					5m Tow.
		20:07	EN				49 9.8	126 58.84	390						
19	EP07	20:22	BE	CTD		79	49 08.77	126 59.56	429	250					Bot @ 10m: Nuts & chl
		20:36	EN				49 08.75	126 59.45	422						
		20:38	BE	Bongo		80	49 08.74	126 59.42	420	150					
		20:46	EN				49 08.73	126 59.39	419						
		20:55	BE	Trawl		81	49 8.5	127 00.20	540						SURFACE TOW
		21:25	EN				49 07.80	127 03.08	770						

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 10 of 43

Month <i>June</i>				Year <i>2011</i>			Ship <i>FV. Viking Storm</i>				Cruise ID <i>2011-37</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
20	U13	0053	BE	Bongo		82	49 28.76	127 14.67	336	150					2 ^{SO}
		0102	BE				49 28.79	127 14.66							
		0106	BE	CTD		83	49 28.77	127 14.67	339	250					3 ^{BE} Bot @ 10m: Nuts & chl
		0121	BE				49 28.74	127 14.51							
20		00:10	BE	Trawl		84	49 28.61	127 17.58	593	0					1 ST
		00:40	BE				49 28.42	127 15.15	478						
= END OF DAY															
20	U14	12.58	BE	CTD		85	49 38.21	126 57.195	49	35					Bot @ 10m: Nuts & chl
		12.59	BE				49 38.20	126 57.20							
		12.95	BE	Bongo		86	49 38.19	126 57.208	49	35					
		13:02	BE				49 38.18	126 57.21	49						
		13:10	BE	TRAWL		87	49 37.91	126 58.02	51	0					Scallop
		13:40	BE				49 36.91	127 1.305	94						
20	U15	13:59	BE	Bongo		88	49 35.97	127 03.15	108	95					
		14:05	BE				49 35.97	127 03.21							
		14:09	BE	CTD		89	49 35.96	127 03.22	108	95					Bot @ 10m: Nuts & chl
		14:14	BE				49 35.93	127 03.24							
		14:24	BE	Trawl		90	49 35.49	127 04.10	112	15					15m.
		14:54	BE				49 33.93	127 6.9	140						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

VI13 ⊗ Trawl conducted first, then bongo & CTD. Consecutive numbers not changed.

VI13 - OFF NOOTKA ISLAND

VI14 - GRASS CALM, NO WIND, SMOOTH WAVES, $\frac{1}{4}$ METER SURGE, OFF NOOTKA ISLAND.

VI15 - OFF NOOTKA ISLAND

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 11 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F.V. Nereus</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
20	VI16	15:17	BE	CTD		91	49 32.49	127 09.22	137	125					off NORTHERN Trawl
		15:24	BE				49 32.45	127 09.16							Bot @ 10m: Nuts & chl
		15:26	BE	Bongo		92	49 32.44	127 09.15	137	125					
		15:34	BE				49 32.40	127 09.10							
		15:41	BE	TRAWL		93	49 32.04	127 09.73	140	Ø					SURFACE
		16:11	BE				49 30.39	127 12.34							
20	VI17	19:42	BE	Bongo		94	49 44.64	127 36.71	487	150					2 ND off Kyrnos
		19:51	BE				49 44.68	127 36.77							
		19:54	BE	CTD		95	49 44.71	127 36.77	477	250					3 RD Bot @ 10m: Nuts & chl
		20:09	BE				49 44.85	127 36.69	410						
		18:57	BE	TRAWL		96	49 42.65	127 39.95	842	30					1 ST 30m Trawl
		19:27	BE				49 44.15	127 37.21	583						
20	VI18	21:11	BE	CTD		97	49 48.74	127 31.26	78	65					2 ND off Kyrnos
		21:15	BE				49 48.74	127 31.33							Bot @ 10m: Nuts & chl
		21:17	BE	Bongo		98	49 48.74	127 31.34	80	70					3 RD
		21:21	BE				49 48.74	127 31.35							
		20:27	BE	TRAWL		99	49 46.75	127 34.36	140	Ø					1 ST SURFACE
		20:57	BE				49 48.50	127 31.63							

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

900 ft. 1000 STATION TO HARP ROCK
0.146 METRIC MILES "

VI17: Trawl conducted first then bongo & CTD. Consecutive numbers not changed.

VI18: Trawl conducted first, then CTD & bongo. Consecutive numbers not changed.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 12 of 43

Month <i>June</i>				Year <i>2011</i>			Ship <i>FV. Nereus Seam</i>				Cruise ID <i>2011-37</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
20	V119	22:29	BE	Bongo		100	49 52.87	127 26.40	68	55					2 ^{ED}
		22:32	EN				49 52.89	127 26.43							
		22:35	BE	CTD		101	49 52.90	127 26.43	68	55					3 ^{ED} Bot@10m: Nuts & chl
		22:38	EN				49 52.91	127 26.43							
		22:44	BE	Trawl		102	49 50.64	127 28.67	75	15					1 ST
		22:14	EN				49 52.45	127 26.77							
20	V120	23:42	BE	CTD		103	49 55.32	127 20.00	58	50					2 ^{ED} Bot@10m: Nuts & chl
		23:45	EN				49 55.32	127 19.98							
		23:47	BE	Bongo		104	49 55.32	127 19.98	58	45					3 ^{ED}
		23:50	EN				49 55.32	127 19.97							
		23:54	BE	Trawl		105	49 54.23	127 23.63	61	Ø					1 ST
END OF DAY		23:27	EN				49 55.24	127 20.42	57						
21	V103	13:02	BE	CTD		106	50 34.52	127 34.76	135	125					Bot@10m: Nuts & chl
		13:09	EN				50 34.51	127 34.69							
		13:11	BE	Bongo		107	50 34.51	127 34.68	135	125					
		13:12	EN				50 34.52	127 34.67							
		13:26	BE	Trawl		108	50 34.85	127 35.25	135	Ø					Brain Tow, SURFACE
		13:41	EN				50 35.44	127 36.80							

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

VI19: Trawl conducted first then bongo & CTD. Consecutive numbers not changed.

VI20: Trawl conducted first then CTD & bongo. Consecutive numbers not changed.

VI03 - Quatsino, Halberd In.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 13 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>R/V Viking Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
21	IWI04	14:01	BE	Bongo		109	50 35.32	127 38.18	113	105					
		14:05	END				50 35.34	127 38.18	112						
		14:09	BE	CTD		110	50 35.35	127 38.17	112	105					Bot @ 10m: Nuts & chl
		14:15	END				50 35.34	127 38.15	112						
		14:23	BE	Trawl		111	50 35.32	127 39.07	113	15					15m Tow.
		14:53	END				50 35.51	127 42.61	92						
21	IWI05	15:02	BE	CTD		112	50 36.07	127 47.085	54	45					Bot @ 10m: Nuts & chl
		15:25	END				50 36.075	127 47.065	54						
		15:27	BE	Bongo		113	50 36.074	127 47.080	54	45					
		15:30	END				50 36.07	127 47.05	57						
		15:39	BE	Trawl		114	50 35.96	127 46.27	53	0					SURFACE TOW.
		16:09	END				50 35.44	127 42.485	87						
21	IWI06	17:14	BE	Bongo		115	50 34.92	127 28.81	66	55					
		17:18	END				50 34.91	127 28.83	68						
		17:20	BE	CTD		116	50 34.89	127 28.825	68	60					Bot @ 10m: Nuts & chl
		17:24	END				50 34.88	127 28.815	68						
		17:31	BE	Trawl		117	50 34.88	127 29.564	77	0					SURFACE TOW.
		18:01	END				50 34.04	127 32.87	107						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

IUI04 - Quasiuo, HONOLULU Is.

IUI05 - Quasiuo, HONOLULU Is.

IUI06 - Quasiuo, RUPERT Is.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 14 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>FV. Viking Storm</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
20	W107	19:37	BE	CTD		118	50 24.052	127 29.365	127	120					Bot @ 10m' Nuts & chl
		19:43	BE				50 24.058	127 29.355	127						
		19:44	BE	Bongo		119	50 24.059	127 29.351	127	115					
		19:51	BE				50 24.083	127 29.37	127						
		20:03	BE	TRAWL		120	50 24.75	127 29.86	141	15					15m
		20:33	BE				50 26.93	127 31.32	192						
21	W108	20:51	BE	Bongo		121	50 27.973	127 32.193	150	135					
		20:57	BE				50 27.958	127 32.131	126						
		21:04	BE	CTD		122	50 28.041	127 32.361	170	150					Bot @ 10m' Nuts & chl
		21:11	BE				50 28.016	127 32.266	159						
		21:19	BE	TRAWL		123	50 28.385	127 32.78	182						SURFACE.
		21:49	BE				50 30.155	127 35.194	135						
21	W109	22:17		CTD		124	50 31.73	127 38.60	95	85					Bot @ 10m' Nuts & chl
		22:21					50 31.76	127 38.56							
		22:24		Bongo		125	50 31.78	127 38.60	78	60					
		22:27					50 31.78	127 38.63							
		22:37		Trawl		126	50 31.66	127 39.68	123	15					15m Trawl
		23:07					50 30.23	127 42.46							

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

IVE07 - Quatsino, Heroultos In.

IVE08 - Quatsino, Heroultos In.

IVE08 - Banded, steep slope, rising bottom depth during last.

CD, moved to center of channel, wind + tide pushing Viking storm to beach.
Frigate bearing down channel, at Viking storm position.

IVE09 - Quatsino, main channel, starting just W of Prank Is.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 5 of 43

Month <u>June</u>				Year <u>2011</u>		Ship <u>R/V Viking Green</u>			Cruise ID <u>2011-37</u>						
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
21	W110	23:25	BE	Bongo		127	50 28.77	127 45.43	116	105					
		23:35	EM				50 29.73	127 45.37	112						
		23:38	BE	CTD		128	50 29.75	127 45.32	112	105					Bot@10m: Nuts&chl
		23:44	EM				50 29.47	127 45.23	113						
		23:51	BE	Trawl		129	50 29.63	127 46.05	145						SURFACE
22		00:21	EM				30 28.28	127 48.88	127						
= END OF DAY															
22	W111	13:21	BE	CTD		130	50 28.99	127 51.20	168	158					Bot@10m: Nuts&chl
		13:20	EM				50 29.036	127 51.179	166						
		13:22	BE	Bongo		131	50 29.047	127 51.164	166	150					
		13:31	EM				50 29.073	127 51.109	161						
		13:39	BE	Trawl		132	50 28.739	127 51.843	150						SURFACE
		14:09	EM				50 28.359	127 51.141	194						
22	W112	14:26	BE	Bongo		133	50 28.28	127 57.22	143	130					
		14:33	EM				50 28.25	127 57.34							
		14:36	BE	CTD		134	50 28.25	127 57.34	135	125					Bot@10m: Nuts&chl
		14:44	EM				50 28.267	127 57.355	133						
		14:51	BE	Trawl		135	50 27.776	127 57.205	227						SURFACE
		15:21	EM				50 27.283	127 57.585	111						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

IV110 - Quatsine, main channel, East East Prickton Is

IV111 - Quatsine, main channel, off Kaskine Is

IV112 - Quatsine So, Kains Is

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 16 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>FV Virgin Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
21	VI21	15:43	BE	CTD		136	50 24.70	128 00.51	186	170					Bot @ 10m: Nuts & chl
		15:52	EU				50 24.75	128 00.56							
		15:54	BE	Bottle		137	50 24.75	128 00.56	172	150					
		16:02	EU				50 24.77	128 00.58							
		16:10	BE	Trawl		138	50 24.42	127 01.23	147	Ø					SURFACE TOW
		16:40	EU				50 22.75	128 03.826	72						
22	VI22	17:01	BE	Bottle		139	50 21.44	128 05.69	79	65					
		17:05	EU				50 21.45	128 05.75							
		17:08	BE	CTD		140	50 21.46	128 05.77	79	70					Bot @ 10m: Nuts & chl
		17:11	EU				50 21.49	128 05.77							
		17:20	BE	Trawl		141	50 21.144	128 6.54	89	15.					15m Trawl
		17:50	EU				50 19.68	128 9.29	144						
22	VI23	18:16	BE	CTD		142	50 18.00	128 12.00	172	160					Bot @ 10m: Nuts & chl
		18:25	EU				50 18.07	128 12.00							
		18:27	BE	Bottle		143	50 18.08	128 12.00	172	150					
		18:35	EU				50 18.14	128 12.01							
		18:44	BE	Trawl		144	50 17.66	128 12.96	372	Ø					SURFACE
		19:14	EU				50 16.10	128 15.31	700						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time

MR = Messenger Release Time

RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

VI21 - off Quinsig, 1m swell, rippled seas, low cloud, bright horizon
surface tow

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 17 of 43

Month <u>June</u>		Year <u>2011</u>		Ship <u>R/V. U.King Storm</u>		Cruise ID <u>2011-37</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
22	VI24	19:37	BE	BONGO		145	50 14.43	128 17.85	950	150					
		19:46	BE				50 14.45	128 17.86							
		19:49	BE	LTD		146	50 14.45	128 17.85	950	250					Bot @ 10m: Nuts & chl
		20:04	BE				50 14.44	128 17.72							
		20:12	BE	TRAWL		147	50 14 05	128 18.61	1150	30					30m Tow
		20:12	BE				50 12 84	128 21.62	71200						
23	VI25	00:06	BE	CTD		148	50 34.17	128 28.80	178	165					2 nd Bot @ 10m: Nuts & chl
23		00:14	BE				50 34.17	128 28.83							
23		00:17	BE	BONGO		149	50 34.15	128 28.84	178	150					3 rd
23		00:24	BE				50 34.20	128 28.86							
22		23:21	BE	TRAWL		150	50 32.33	128 31.44	183						1 st SURFACE
22		23:51	BE				50 33.98	128 29.154	181						
23	VI26	01:22		BONGO		151	50 37.87	128 24.54	75	65					2 nd
		01:27					50 37.93	128 24.57							
		01:30		CTD		152	50 37.96	128 24.57	74	65					3 rd Bot @ 10m: Nuts & chl
		01:33					50 38.00	128 24.58							
		01:41		TRAWL		153	50 36.014	128 26.80	113	15					1 st
		01:11					50 34.54	128 25.038	83						
END OF DAY															

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

VI24 - OFF OATSIN

1/2 m SWAMP, BRIGHT SKIES, RIPPED SEAS

JUN 22, 2011

50, 20.85, 128 26.88

4 Killer Whales SITED. AROUND SHIP.

14:45.

2 juveniles, 1 IMADIA, 1 ADULT MALE.

VI25 - OFF San Jose Bay.

1/4 m SWAMP, BRIGHT SKIES, RIPPED SEAS.

CTD & bongo.

Consecutive numbers not changed.

Trawl conducted first, then

VI26 - OFF San Jose Bay.
not changed.

Trawl conducted first, then bongo & CTD. Consecutive numbers

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 18 of 43

Month JUNE				Year 2011			Ship F/V Viking Storm				Cruise ID 2011-37				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	T08	13:09	BE	CTD		154	50 42.544	129 28.892	1900	250.					Bot @ 10m: Nuts & chl
		13:22	EN				50 42.47	129 28.613	1900						
		13:25	BE	Bongo		155	50 42.45	129 28.56	1900	150					
		13:33	EN				50 42.45	129 28.50	1900						
		13:42	BE	Trawl		156	50 42.81	129 27.72	1900	0					SURFACE TOW
		14:12	EN				50 44.22	129 24.91	133						
23	T07	15:19	BE	Bongo		157	50 49.51	129 14.2	111	100					
		15:25	EN				50 49.51	129 14.32	112						
		15:28	BE	CTD		158	50 49.51	129 14.323	110	100					Bot @ 10m: Nuts + Chl.
		15:35	EN				50 49.53	129 14.28	112						
		15:42	BE	Trawl		159	50 49.97	129 13.69	96	15.					15m Tow
		16:12	EN				50 51.41	129 11.18	79						
23	T06	17:15	BE	CTD		160	50 56.075	129 1.407	64	55.					Bot @ 10m: Nuts + Chl.
		17:17	EN				50 56.054	129 1.433	63						
		17:21	BE	Bongo		161	50 56.02	129 1.47	63	50					
		17:23	EN				50 56.012	129 1.406	63						
		17:30	BE	Trawl		162	50 56.56	129 00.99	66	0					SURFACE TOW
		18:00	EN				50 57.53	128.58.92	67						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

108 - LOW CLOUDS NOT BRIGHT, $\frac{1}{2}$ MILE SWELL, RIPPLED SEAS.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 19 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F/V Viking Star</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	T05	18:43	BE	Buoy		163	51 00.64	128 52.54	63	50					
		18:46	EN				51 00.67	128 52.6	63						
		18:52	BE	CTD		164	51 00.74	128 52.68	62	50					NOTS + CHL @ 10m
		18:54	EN				51 00.75	128 52.7	62						
		19:00	BE	TRAWL		165	51 01.106	128 52.32	60						SURFACE TOW
		19:30	EN				51 02.28	128 51.2.29	57						
23	T04	20:01	BE	CTD		166	51 04.51	128 44.43	58	45					NOTS + CHL @ 10m
		20:04	EN				51 04.52	128 44.39							
		20:06	BE	Buoy		167	51 04.53	128 44.36	59	50					
		20:09	EN				51 04.55	128 44.33	59						
		20:17	BE	TRAWL		168	51 04.939	128 43.623	61						SURFACE TOW
		20:47	EN				51 06.24	128 40.59	73						
23	T03	21:17	BE	Buoy		169	51 08.12	128 35.51	138	125					
		21:25	EN				51 08.19	128 35.51	138						
		21:27	BE	CTD		170	51 08.19	128 35.52	138	125					NOTS + CHL @ 10m
		21:34	EN				51 08.22	128 35.46							
		21:43	BE	TRAWL		171	51 8.64	128 34.54	149	15					15m Tow.
		22:13	EN				51 9.991	128 31.54	200						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 20 of 43

Month <u>June</u>		Year <u>2011</u>		Ship <u>R/V Viking Storm</u>		Cruise ID <u>2011-37</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	T02	22:47	BE	CTD		172	51 12.46	128 27.195	188	175					ROSETTE @ 10m
		22:56	BE				51 12.484	128 27.115	188						
		22:58	BE	Bongo		173	51 12.48	128 27.101	188	150					
		23:07	BE				51 12.499	128 27.019	187						
		23:14	BE	Trans.		174	51 12.474	128 26.267	184	0					SURFACE TOW
		23:44	BE				51 14.107	128 23.14	114						
24	T01	00:09	BE	Bongo		175	51 16.18	128 20.39	77	65					SURFACE TOW
		00:14	BE				51 16.18	128 20.38							
		00:17	BE	CTD		176	51 16.18	128 20.39	77	65					ROSETTE @ 10m
		00:20	BE				51 16.19	128 20.37							
		00:28	BE	Trans.		177	51 16.67	128 20.45	79	0					SURFACE TOW
END OF DAY		00:58	BE				51 18.65	128 21.125	73						
24	QCSDOI	13:01	BE	CTD		178	51 42.164	128 14.028	137	130					ROSETTE @ 10m
		13:09	BE				51 42.67	128 14.002	138	130					
		13:16	BE	Bongo		179	51 42.684	128 13.989	138	135					
		13:19	BE				51 42.718	128 13.977	139						
		13:27	BE	Trans.		180	51 42.816	128 14.957	134	0					SURFACE TOW
		13:57	BE				51 43.257	128 18.668	142						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

This page is for any notes or observations

QCSD 01 - WEST OF HAKRI PASS.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 21 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F.V. Viking Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
24	QCSD02	14:31	BE	Bongo		181	51 43.489	128 25.27	144	140					
		14:40	EU				51 44.028	128 25.215	144						
		14:43	BE	CTD		182	51 44.045	128 25.200	144	135					MOSS + CHL @ 10m
		14:51	EN				51 44.08	128 25.156	144						
		15:00	BE	TRAWL		183	51 44.154	128 24.185	144	15					15m TOW
		15:30	EU				51 44.544	128 29.768	145						
24	QCSD03	16:09	BE	CTD		184	51 45.18	128 36.64	100	90					MOSS + CHL @ 10m
		16:14	EU				51 45.16	128 36.632	101						
		16:15	BE	Bongo		185	51 45.16	128 36.611	103	80					
		16:27	EU				51 45.18	128 36.57	103						
		16:30	BE	TRAWL		186	51 45.244	128 37.39	102						SURFACE TOW
		17:00	EU				51 45.612	128 40.896	71						
24	QCSD04	18:12	BE	Bongo		187	51 54.45	128 35.11	130	120					
		18:25	EU				51 54.657	128 35.093	128						
		18:29	BE	CTD		188	51 54.629	128 35.089	128	120					MOSS + CHL @ 10m
		18:34	EN				51 54.588	128 33.009	127						
		18:41	BE	TRAWL		189	51 54.536	128 35.684	127						SURFACE TOW
		19:11	EU				51 54.866	128 39.575	148						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 =

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

QCS002 - W. off HAKA' PIES, 20 PORPOISES AT SPOT OF STATION WHILE CONDUCTING CTD

QCS004 - 1/4 m SURFAL, RIPPED SCAL, BRIGHT SKINS.

QCS004 - W. off S. Goose Is

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 22 of 43

Month <u>June</u>		Year <u>2011</u>		Ship <u>RV. Vixen Storm</u>		Cruise ID <u>2011-37</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
24	QCSD05	19:54	BE	CTD		190	51 55.23	128 47.209	132	120					NOYS + CHL @ 10m
		19:59	BE				51 55.48	128 47.21	131						
		20:00	BE	BONGO		191	51 55.481	128 47.191	132	120					
		20:10	BE				51 55.455	128 47.157	132						
		20:18	BE	TRAWL		192	51 55.509	128 48.172	137						Tow at 15m
		20:45	BE				51 55.94	128 51.767							
24	QCSD06	21:30	BE	BONGO		193	51 56.943	128 59.392	169	95					
		21:36	BE				51 56.927	128 59.311	109						
		21:40	BE	CTD		194	51 56.933	128 59.234	108	95					NOYS + CHL @ 10m
		21:45	BE				51 56.944	128 59.117	107						
		21:51	BE	TRAWL		195	51 56.987	128 59.803	109						Tow at SURFACE
		22:21	BE				51 57.273	129 3.141	127						
25	H01	0:16	BE	CTD		196	52 12.141	129 8.784	162	150					BOT @ 10m mid 9 chl
		0:23	BE				52 12.103	129 8.767	162						
		0:25	BE	BONGO		197	52 12.098	129 8.766	162	150					
		0:35	BE				52 12.081	129 8.765	150						
		0:41	BE	TRAWL		198	52 12.756	129 9.522	163						SURFACE Tow
		1:11	BE				52 13.06	129 13.395	159						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

ACSD05 - SHORTER TOW 27 MINUTES, PORPOISES

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 23 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F.V. Victoria Seam</u>			Cruise ID					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
25	H02	1259	BE	CTD		199	52 15.55	129 25.95	175	165					MOTS + CHL @ 10m
		1308	BE				52 15.55	129 25.844	173	150					
		13 10	BE	Bongo		200	52 15.562	129 25.813	172	150					
		13 19	BE				52 15.545	129 25.709	169						
		13 26	BE	Trawl		201	52 15.708	129 26.403	182						SURFACE TOW
		13 56	BE				52 16.628	129 29.997	192						
25	H03	14 44	BE	Bongo		202	52 19.28	129 40.93	210	150					
		15:04	BE				52 19.197	129 40.832	211						
		15:09	BE	CTD		203	52 19.152	129 40.774	210	200					MOTS + CHL @ 10m
		15:20	BE				52 19.078	129 40.627	209						
		15:28	BE	Trawl		204	52 19.12	129 41.600	210	15					15m Tow
		15:58	BE				52 19.51	129 41.506	209						
25	H04	1701	BE	CTD		205	52 21.94	129 57.63	183	175					MOTS + CHL @ 10m
		1711	BE				52 21.912	129 57.562	185						
		1713	BE	Bongo		206	52 21.907	129 57.55	185	150					
		1722	BE				52 21.872	129 57.495	178						
		1730	BE	Trawl		207	52 22.06	129 58.365	206						SURFACE
		1800	BE				52 23.073	129 1.873	261						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW

= Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 24 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>R/V. Valero Star</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
25	H05	18:53	BE	Bongo		208	52 25.543	130 13.93	328	150					
		19:02	BE				52 25.571	130 13.954	324						
		19:05	BE	CTD		209	52 25.584	130 13.967	327	250					NOIS + CHL @ 10m
		19:20	BE				52 25.639	130 13.853	327						
		19:30	BE	Trawl		210	52 26.012	130 14.726	327	15.					15m Tow
		20:00	BE				52 27.373	130 17.586	315						
25	H06	20:54	BE	CTD		211	52 28.892	130 29.16	169	160					NOIS + CHL @ 10m
		21:04	BE				52 28.925	130 29.177	168						
		21:06	BE	Bongo		212	52 28.928	130 29.177	168	150					
		21:14	BE				52 28.96	130 29.18	169						
		21:22	BE	Trawl		213	52 29.165	130 30.028	155						SURFACE Tow
		21:52	BE				52 29.59	130 33.74	132						
25	H07	22:45	BE	Bongo		214	52 31.615	130 44.972	145	135					
		22:53	BE				52 31.465	130 44.985	151						
		22:56	BE	CTD		215	52 31.716	130 45.015	148	140					Bot @ 10m: Nutachi
		23:04	BE				52 31.742	130 45.104	146						
		23:11	BE	Trawl		216	52 31.997	130 46.141	164						15m Tow
		23:41	BE				52 32.959	130 49.845	116						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

H06 - $\frac{1}{4}$ M. SWELL, RAPID 3-4'S, LIGHT W 5-10 WINDS, SKIES BRIGHT

- SEA NOW TOSSENG HORIZONT BY SIDE OF SHIP.

H07 - $\frac{1}{8}$ M. SWELL, "MILK POWD" CALM

This page is for any notes or observations

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 25 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>R/V. Viking Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
26	1408	00:25	BE	CTD		217	52 35.317	131 00.094	104	95					Bot @ 10m: Nutsch
		00:32	BE				52 35.331	131 00.155	104						
		00:33	BE	Bongo		218	52 35.347	131 00.166	104	95					
		00:40	BE				52 35.34	131 00.183	105						
		00:46	BE	Trawl		219	52 35.44	131 00.47	105						
		01:16	BE				52 35.752	131 05.42	109						
END OF DAY															
26	14501	13:04	BE	CTD		220	52 52.724	130 49.646	54	45					Bot @ 10m: Nutsch
		13:06	BE				52 52.734	130 49.654	54						HS01 - W of Egan
		13:07	BE	Bongo		221	52 52.745	130 49.658	54	45					Group: Hecare S
		13:12	BE				52 52.784	130 44.64							100 SENS, RPP, RPP
		13:19	BE	Trawl		222	52 52.78	130 43.867							SENS
		13:49	BE				52 52.959	130 40.246							Surface Trawl
26	14502	14:30	BE	Bongo		223	52 52.716	130 32.193	104	95					
		14:35	BE				52 52.78	130 32.224	106						
		14:38	BE	CTD		224	52 52.804	130 32.243	106	95					Bot @ 10m: Nutsch
		14:43	BE				52 52.86	130 32.275	106						
		14:51	BE	Trawl		225	52 52.888	130 31.306	109	15					15 m Tow
		15:21	BE				52 52.82	130 27.434							

Cast Type:
 BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:
 US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Time Code:
 BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2011-37

DATE:

From: 15 JUN 2011 to: 06 JUL 2011

VESSEL:

F/V VIKING STORM

PROJECT(S):

High SEAS SALMON
BOOK 2 OF 2

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division
North Saanich, BC, Canada

WaterProperties.ca

Captain: Chris Roberts
 Second Officer: Flo Salm
 Fishing Master: _____
 First Officer: Scott Murray
 Third Officer: Rory Johnson

Mission Participants / Agencies:

[illegible][illegible]

Data logging computer:

Data acquisition program: _____

CTD deck unit make: _____ model: _____ serial number: _____

Primary CTD

Make: SBE model: 19Plus serial number: 4076 (David Welch 013)

Primary temperature serial number: 4076

Primary conductivity serial number: 4076

Secondary temperature serial number:

Secondary conductivity serial number: —

Transmissometer:	Model:

Fluorometer: Model	Cable gain:
--------------------	-------------

Oxygen sensor: _____ Model: _____

PAR sensor:	Model:
-------------	--------

Other sensors:

Other sensors:

Other sensors:

Other sensors:

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number:

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer: _____ Model: _____

Fluorometer: Model _____ Cable gain: _____

Oxygen sensor: _____ Model: _____

PAR sensor: _____ Model: _____

Other sensors:

Other sensors:

Other sensors:

Other sensors:

CTD calibration bottle location (height above CTD in metres):

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 26 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F.V. Viking Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
26	H503	15:58	BE	CTD		226	52 52.698	130 20.194	190	180		/			Bot @ 10m NOS + CHL
		16:08	EN				52 52.783	130 20.206	191						
		16:11	BE	Bottle		227	52 52.803	130 20.218	191	150					
		16:19	EN				52 52.904	130 20.314	189						
		16:26	BE	Trawl		228	52 52.918	130 19.522	200	0					SURFACE TOW
		16:56	EN				52 52.75	130 15.700	283						
26	H504	17:33	BE	Bottle		229	52 52.553	130 8.485	246	150					
		17:42	EN				52 52.572	130 8.568	246						
		17:44	BE	CTD		230	52 52.561	130 8.582	246	230		/			Bot @ 10m NOS + CHL
		17:58	EN				52 52.63	130 8.663	245						
		18:06	BE	Trawl		231	52 52.599	130 7.203	249	0					SURFACE TOW
		18:36	EN				52 52.508	130 3.782	253						
26	H505	19:20	BE	CTD		232	52 52.822	129 55.021	213	200		/			Bot @ 10m NOS + CHL
		19:30	EN				52 52.845	129 54.909	211						
		19:32	BE	Bottle		233	52 52.846	129 54.882	211	150					
		19:41	EN				52 52.855	129 54.874	209						
		19:48	BE	Trawl		234	52 53.412	129 54.776	210	0					SURFACE TOW
		20:18	EN				52 55.585	129 54.724	209						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

H503 - WEST OF ESTAVAN GROUP IN PELATE STRAIT

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 27 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>FV. Viking Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
26	A506	20:58	BE	Bottle		235	53 00.51	129 53.42	302	150					
		21:06	BE				53 00.50	129 53.29							
		21:09	BE	CTD		236	53 00.52	129 53.25	300	250		1			
		21:25	BE				53 00.80	129 53.09							BOT @ 10m - NITS + CHL
		21:32	BE	TRAWL		237	53 1.200	129 52.95	316						
		22:02	BE				53 3.401	129 52.331	185						SURFACE TOW
26	A507	22:40	BE	CTD		238	53 5.149	129 59.46	206	180		1			
		23:49	BE				53 5.062	129 59.526	146						BOT @ 10m - NITS + CHL
		23:51	BE	Bottle		239	53 5.055	129 59.54	175	150					
		23:00	BE				53 5.078	129 59.59	161						
		23:06	BE	TRAWL		240	53 5.135	130 50.546	144						
		23:36	BE				53 5.662	130 4.718	61						SURFACE TOW
27	A508	00:12	BE	Bottle		241	53 7.252	130 11.345	107	95					
		00:17	BE				53 7.282	130 11.329	107						
		00:20	BE	CTD		242	53 7.286	130 11.310	107	95		1			BOT @ 10m - NITS & CHL
		00:25	BE				53 7.326	130 11.328	107						
		00:32	BE	TRAWL		243	53 7.474	130 12.177	110						
		00:02	BE				53 8.984	130 15.889	176						SURFACE TOW
= END OF DAY															

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

This page is for any notes or observations

11507 - NO SWELL, RIPPED SEAS SKIN TONIGHT

11508 - W OR H, ESTIVAN GROUP, HALATH ST.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 28 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>R/V. Viking Storm</u>			Cruise ID <u>2011-37</u>					Page <u>28</u> of <u>43</u>	
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
27	HSD9	12:56	BE	CTD		244	53 46.733	130 42.847	116	105		1			BOT 6 DM HOTS + CHL	
		13:02	EV				53 46.703	130 42.89	115							
		13:04	BE	Bongo		245	53 46.683	130 42.903	117	105						
		13:10	EV				53 46.650	130 42.940	114							
		13:19	BE	Trawl		246	53 46.477	130 43.855	126							
		13:42	EV				53 46.130	130 43.850	123							
27	HS10	14:23	BE	Bongo		247	53 49.13	130 53.21	92	80					BOT 6 DM HOTS + CHL	
		14:27	EV				53 49.128	130 53.23	92							
		14:30	BE	CTD		248	53 49.127	130 53.218	93	80		1				
		14:35	EV				53 49.112	130 53.244	93							
		14:43	BE	Trawl		249	53 49.445	130 52.438	93	15						
		15:13	EV				53 51.007	130 49.414	92							
28	HS11	15:49	BE	CTD		250	53 54.155	130 53.352	69	55		1			BOT 6 DM HOTS + CHL	
		15:52	EV				53 54.152	130 53.342	69							
		15:54	BE	Bongo		251	53 54.15	130 53.349	69	55						
		15:57	EV				53 54.144	130 53.377	69							
		16:04	BE	Trawl		252	53 54.222	130 54.162	74							
		16:34	EV				53 54.492	130 50.099	81							

Cast Type:

USW = Sea Water Loop

Bottle Firing Method:

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

HS09 - Water of Parkers Is, Alaska Strait.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 29 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>R.V. Viking Spear</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
27	4512	17 06	BE	Bottle		253	53 56.92	131 03.82	73	60					
		17 10	BE				53 56.92	131 03.81							
		17 13	BE	CTD		254	53 56.92	131 03.82	73	60		1			Bot @ 10m NUTS & CHL
		17 16	BE				53 56.93	131 03.84							
		17 23	BE	Trawl		255	53 57.13	131 3.047	78	0					SURFACE TOW.
END OF DAY		17 53	GU				53 57.99	130 59.48	54						
28	413001	13:11	BE	CTD		256	54 11.443	130 22.435	86	75		1			Bot @ 10m NUTS & CHL
		13 15	BE				54 11.451	130 22.441	85						
		13:17	BE	Bottle		257	54 11.455	130 22.442	85	75					
		13:22	BE				54 11.454	130 22.450	86						
		13:30	BE	Trawl		258	54 11.472	130 23.477	97	0					SURFACE TOW
		14:00	BE				54 12.312	130 27.365	89						
28	413002	14:37	BE	Bottle		259	54 10.474	130 33.794	109	100					
		14:41	BE				54 10.478	130 33.842	109						
		14:45	BE	CTD		260	54 10.477	130 33.822	109	100		1			Bot @ 10m NUTS & CHL
		14 51	BE				54 10.475	130 33.907	109						
		14 59	BE	Trawl		261	54 10.808	130 34.884	107	15					15m TOW
		15 29	BE				54 12.008	130 38.38	113						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

54° 03.424 N 130° 40.006 W 12:10 PDT MINK WHALE SPOTTED HEADING SOUTH. EDGE PASS

IBCO1 - CHATHAM Is., S. off KINGMAN Is.

STATION dist.

IBCO1

IBCO2

IBCO3

DT01

DT02

DT03

DT04

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 30 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F.V. Viking Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
28	IB03	16:04	BE	CTD		262	54 14.095	130 43.731	164	150		1			Bot @ 10m, 100% + CHL
		16:11	EN				54 14.064	130 43.704	161						
		16:13	BE	Bongo		263	54 13.988	130 43.695	158	150					
		16:21	EN				54 13.935	130 43.697	157						
		16:30	BE	Trawl		264	54 14.378	130 43.434	156	0					SURFACE TOW
		17:00	EN				54 16.461	130 44.849	157						
28	IB104	17:33	BE	Bongo		265	54 18.181	130 49.907	137	130					
		17:39	EN				54 18.141	130 49.817	139						
		17:43	BE	CTD		266	54 18.124	130 49.746	142	130		1			Bot @ 10m, 100% + CHL
		17:50	EN				54 18.131	130 49.646	139						
		17:54	BE	Trawl		267	54 18.288	130 50.339	138	0					SURFACE TOW
		18:27	EN				54 18.921	130 53.585	152						
28	PT01	19:41	BE	CTD		268	54 25.198	131 3.052	95	85		1			Bot @ 10m, 100% + CHL
		19:45	EN				54 25.172	131 3.054	95						
		19:47	BE	Bongo		269	54 25.166	131 3.055	95	85					
		19:51	EN				54 25.159	131 3.055	95						
		20:02	BE	Trawl		270	54 25.116	131 4.003	110	0					SURFACE TOW
		20:30	EN				54 25.414	131 8.264	112						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW

= Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

FLIGHT DATE BEARING DOWN ON STATION POSITION NECESSITIES HARRY SCIENCE OPERATIONS

IBCO1 - 03 CHATHAM SO, NORTH END
IBCO4 - BROWNING ENTRANCE, NEAR TRIPLE IS.
IBCO4 - 1 IN SUNNY, RIPPED SKY, CLOUDY.

DOI - DIXON E - CELESTIAL RE. TRANSECT

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 31 of 43

Month <i>June</i>		Year <i>2011</i>		Ship <i>F.V. Viking Storm</i>		Cruise ID <i>2011-37</i>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
28	DT02	2100	BE	BOTTO		271	54 25.93	131 11.95	158	148					
		2110	BN				54 25.95	131 12.12							
		2112	BE	CTD		272	54 25.95	131 12.17	162	150					
		2121	BN				54 25.973	131 12.253	163			/			Bot 6/10m Nuts + Chl
		2130	BE	Trawl		273	54 25.268	131 13.43	181	15					
		2200	BN				54 24.558	131 27.939							15m Trawl
28	DT03	2247	BE	CTD		274	54 26.451	131 24.018	264	250		/			Bot 6/10m Nuts + Chl
		2302	BN				54 26.405	131 24.105	262						
		2303	BE	BOTTO		275	54 26.385	131 24.11	265	150					
		2311	BN				54 26.372	131 24.149	274						
		2320	BE	Trawl		276	54 26.227	131 25.22	270	0					
		2350	BN				54 25.934	131 29.559	275						SURFACE Trawl
29	DT04	0017	BE	BOTTO		277	54 27.00	131 34.60	286	150					
		0026	BN				54 26.97	131 34.73							
		0031	BE	CTD		278	54 26.94	131 34.79	285	250		/			Bot 6/10m Nuts & Chl
		0045	BN				54 26.89	131 35.00							
		0052	BE	Trawl		279	54 26.43	131 35.14	280	0					
		0122	BN				54 24.68	131 36.734	250						SURFACE Trawl
= END OF DAY															

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

This page is for any notes or observations

DT03 - RICHARD GRAS, 1m SWELL, OCCASIONAL WHITE CAPS, CLOUD COVER, NE WINDS.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 32 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F.V. Viking Stern</u>			Cruise ID <u>2011-32</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
29	DE01	13 01	BE	CTD		280	54 13.77	131 43.51	118	110		/			
		1308	EN				54 13 76	131 43.506	117						BOT @ 10m NITS + CHL
		1316	BE	Bongo		281	54 13 252	131 43 508	117	105					
		1317	EN				54 13 224	131 43.49	115						
		1325	BE	TRAWL		282	54 13 377	131 43 22	114	0					SURFACE TOW
		1355	EN				54 11.905	131 47.801	89						
29	DE02	14 45	BE	Bongo		283	54 8.882	131 57.244	51	45					
		14:48	EN				54 8.811	131 57.284	51						
		14:51	BE	CTD		284	54 8.933	131 57.287	52	45		/			BOT @ 10m NITS + CHL
		1457	EN				54 8.964	131 57.295	52						
		15:00	BE	TRAWL		285	54 9.223	131 58.086	56						SURFACE TOW
		15:30	EN				54 10.159	132 1.321	69						
29	DE03	16:26	BE	CTD		286	54 8.706	132 12.004	48	35		/			BOT @ 10m NITS + CHL
		16:28	EN				54 8.707	132 11.999	48						
		16:30	BE	Bongo		287	54 8.707	132 11.975	48	35					
		16:33	EN				54 8.695	132 11.951	48						
		16 41	BE	TRAWL		288	54 8.682	132 12.900	51	0					SURFACE TOW
		17 11	EN				54 8.790	132 16.540	62						

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

DE01 - Rock Spire Pk
 DE02 - McHenry Bay

DE03 - W. An R. Killer Whales sitting 3 including one male
 in swell, ripping seas, occasional whitecaps

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 33 of 43

Month <i>June</i>				Year <i>2011</i>			Ship <i>R/V. Viking Storm</i>			Cruise ID <i>2011-37</i>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
29	DE04	18:12	BZ	Bongo		289	54 7.208	132 27.836	44	40					
		18:13	BN				54 7.225	132 27.839	44						
		18:14	BZ	CTD		290	54 7.252	132 27.832	44	40		1			BOT@10m: Nuts & Chl
		18:16	BN				54 7.287	132 27.821	44						
		18:24	BZ	Trans.		291	54 7.416	132 28.722	44						SURFACE
		18:54	BN				54 7.969	132 32.27	62						
29	DE05	19:57	BZ	CTD		292	54 9.945	132 43.44	43	30		1			BOT@10m: Nuts & Chl
		20:01	BN				54 9.968	132 43.439	44						
		20:02	BZ	Bongo		293	54 9.969	132 43.430	44	30					
		20:05	BN				54 9.972	132 43.411	44						
		20:14	BZ	Trans.		294	54 10.052	132 44.392	48						SURFACE
		20:41	BN				54 10.142	132 48.143	51						
29	DE06	21:24	BZ	Bongo		295	54 14.043	132 53.585	183	150					
		21:33	BN				54 14.081	132 53.312	198						
		21:37	BZ	CTD		296	54 14.105	132 53.325	198	150		1			BOT@10m: Nuts & Chl
		21:44	BN				54 14.237	132 53.251	237						
		21:54	BZ	Trans.		297	54 14.498	132 53.874	231						SURFACE
		22:24	BN				54 15.962	132 56.584	666						
= END OF DAY															

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

DE04 - VIRAGO Is., DE
DE05 - KASHUANA P., DE
DE06 - LANGARA I., DE.

DE06 - STRONG TIDE, PUSHING TRAWL TO PORT.
STRONG TIDE, CTD + BONEO FISHED TO STARBOARD.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 34 of 43

Month <u>JUNE</u>				Year <u>2011</u>			Ship <u>F.V. Urania Storm</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	D01	13 08	BE	CTD		298	54 32.55	132 19.74	324	250		1			Bot 6 10m CHL + NUTS
		13 24	EN				54 32.674	132 19.633	320						
		13 25	BE	Bongo		299	54 32.701	132 19.601	320	150					
		13 34	EN				54 32.782	132 19.485	326						
		13 43	BE	Trawl		300	54 32.671	132 20.265	330						
30	D02	14 13	EN				54 32.084	132 24.024	356						SURFACE
		15:06	BE	Bongo		301	54 30.77	132 34.200	372	150					
		15:19	EN				54 30.919	132 34.063	371						
		15:21	BE	CTD		302	54 30.965	132 34.039	369	250		1			Bot 6 10m CHL + NUTS
		15:35	EN				54 31.158	132 33.914	361						
30	D03	15:45	BE	Trawl		303	54 31.021	132 34.712	369	15					15m Tow
		16:15	EN				54 30.293	132 38.024	371						
		17:21	BE	CTD		304	54 27.834	132 48.371	377	250		1			Bot 6 10m CHL + NUTS
		17:35	EN				54 27.903	132 47.790	377						
		17:38	BE	Bongo		305	54 27.913	132 47.602	378	150					
30		17:48	EN				54 27.953	132 47.152	379						
		17:55	BE	Trawl		306	54 27.921	132 47.659	378						
		18:25	EN				54 27.305	132 50.558	379						SURFACE Tow

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

D01 - STRONG FLOOD TIDE

D02 - 3m SURF, RIPPED SEAS, 100 WHITECAPS.

- TIDE 1.1 Kts

D03 - DRIFTING AT 2.3 KNOTS WITH CTD + BINGO OPERATIONS.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 35 of 43

Month <u>JUNY</u>		Year <u>2011</u>		Ship <u>F.V. VIKING</u>		Cruise ID <u>2011-37</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	DOH	19:27	BE	BONGO		307	54 24.968	133 00.942	121	110					
		19:34	EN				54 25.044	133 00.863	97						
		19:36	BE	CTD		308	54 25.080	133 00.838	119	100					
		19:43	EN				54 25.147	133 00.812							BOT 610m NURS+CN.
		19:51	BE	Trawl		309	54 25.013	133 01.110	119	15					
		20:21	EN				54 24.136	133 5.419	245						15m TOL
2	OCTO1	—	—	CTD		310									
		—	—	BONGO		311									CANCELLED
		13:04	BE	Trawl		312	54 42.646	132 07.369	153						CANCELLED
		13:34	EN				54 41.322	132 05.141							
2	OCTO2	15:26	BE	CTD		313	52 34.093	131 55.186	211	195					
		15:36	EN				52 34.119	131 55.044	207						BOT 610m NURS+CN.
		15:38	BE	BONGO		314	52 34.122	131 55.018	206	150					
		15:48	EN				52 34.147	131 54.851	196						
		15:58	BE	Trawl		315	52 33.669	131 54.063	171	15					
		16:28	EN				52 31.885	131 51.073	291						15m Trawl

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

DOY - LEECHMOUNT PK

OCTO1 - 2M SURFAS, W/WHITECAPS, WINDS SW 15-20

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 36 of 43

Month <u>June</u>				Year <u>2011</u>			Ship <u>F.V. VIRGINIA STORM</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
<u>2</u>	<u>QW03</u>	<u>17:47</u>	<u>BE</u>	<u>Bottle</u>		<u>316</u>	<u>52 27.038</u>	<u>131 43.1534</u>	<u>202</u>	<u>150</u>					
		<u>17:58</u>	<u>EN</u>				<u>52 27.101</u>	<u>131 42.031</u>	<u>197</u>						
		<u>18:00</u>	<u>13C</u>	<u>CTD</u>		<u>317</u>	<u>52 27.122</u>	<u>131 42.991</u>	<u>197</u>	<u>180</u>		<u>1</u>			<u>Bot @ 10m 100%+CHL</u>
		<u>18:11</u>	<u>EN</u>				<u>52 27.199</u>	<u>131 42.832</u>	<u>191</u>						
		<u>18:18</u>	<u>BE</u>	<u>Trawl</u>		<u>318</u>	<u>52 26.866</u>	<u>131 42.421</u>	<u>191</u>	<u>Ø</u>					<u>SURFACE TOW</u>
		<u>18:48</u>	<u>EN</u>				<u>52 24.831</u>	<u>131 40.461</u>	<u>248</u>						
<u>2</u>	<u>QW04</u>	<u>20:12</u>	<u>BE</u>	<u>CTD</u>		<u>319</u>	<u>52 15.671</u>	<u>131 30.380</u>	<u>158</u>	<u>150</u>		<u>1</u>			<u>Bot @ 10m 100%+CHL</u>
		<u>20:19</u>	<u>EN</u>				<u>52 15.646</u>	<u>131 30.282</u>	<u>134</u>						
		<u>20:27</u>	<u>13C</u>	<u>Bottle</u>		<u>320</u>	<u>52 15.643</u>	<u>131 30.325</u>	<u>133</u>	<u>115</u>					
		<u>20:30</u>	<u>EN</u>				<u>52 15.647</u>	<u>131 30.106</u>	<u>155</u>						
		<u>20:42</u>	<u>BE</u>	<u>Trawl</u>		<u>321</u>	<u>52 15.671</u>	<u>131 29.289</u>	<u>146</u>	<u>15</u>					<u>15m Tow</u>
		<u>21:12</u>	<u>EN</u>				<u>52 13.766</u>	<u>131 27.621</u>	<u>172</u>						
<u>2</u>	<u>QW05</u>	<u>22:46</u>	<u>BE</u>	<u>Bottle</u>		<u>322</u>	<u>52 5.216</u>	<u>131 17.293</u>	<u>163</u>	<u>150</u>					
		<u>22:55</u>	<u>EN</u>				<u>52 5.307</u>	<u>131 17.197</u>	<u>157</u>						
		<u>22:56</u>	<u>BE</u>	<u>CTD</u>		<u>323</u>	<u>52 5.313</u>	<u>131 17.192</u>	<u>157</u>	<u>145</u>		<u>1</u>			<u>Bot @ 10m 100%+CHL</u>
		<u>23:06</u>	<u>EN</u>				<u>52 5.361</u>	<u>131 17.116</u>	<u>145</u>						
		<u>23:12</u>	<u>BE</u>	<u>Trawl</u>		<u>324</u>	<u>52 4.892</u>	<u>131 16.964</u>	<u>170</u>	<u>Ø</u>					<u>SURFACE TOW</u>
		<u>23:42</u>	<u>EN</u>				<u>52 2.52</u>	<u>131 15.653</u>	<u>219</u>						
<u>END OF DAY</u>															
Cast Type: USW = Sea Water Loop Bottle Firing Method															

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

QCI04 - 2 HUMPHAL WALKER, DIAGONAL RING SHIP, PINE CTD + P1050.

QCI05 - 1 M SWAN, RIPPED JARS, SAYS ARE SETTING DOWN.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 37 of 43

Month <u>JULY</u>				Year <u>2011</u>			Ship <u>F.V. U.K. Green</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
3	IBC05	13:01	BE	CTD		325	52 15.208	128 27.36.	103	95		✓			BOT@10m: NUTS & CHL
		13:06	EN				52 15 233	128 27.433							
		13:09	BE	Bongo		326	52 15.256	128 27.482	92	85					
		13:14	EN				52 15.296	128 27.562	80						
		13:22	BE	Trawl		327	52 15.342	128 26.877		0					SURFACE TOW
		13:52	EN				52 15.321	128 27.266							
3	IBC06	14:27	BE	Bongo		328	52 14.59	128 17.60	400	150					
		14:36	EN				52 14.55	128 17.71							
		14:38	BE	CTD		329	52 14.55	128 17.75	400	250		/			BOT@10m: NUTS + CHL
		14:52	EN				52 14.55	128 18.07							
		15:01	BE	Trawl		330	52 14.55	128 17.242	253						15 Tow
		15:31	EN				52 13.906	128 13.764							
3	IBC07	17:01	BE	CTD		331	52 5.645	128 7.392	117	100		/			BOT@10m: NUTS + CHL
		17:06	EN				52 5.643	128 7.344							
		17:07	BE	Bongo		332	52 5.645	128 7.346	136	100					
		17:13	EN				52 5.655	128 7.341	146						
		17:19	BE	Trawl		333	52 5.314	128 6.72	122	0					SURFACE TOW
		17:47	EN				52 4.567	128 3.043	158						

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

This page is for any notes or observations

IBL05 - Seaforth Canyon, McKinnis Is. Light House
1/4 m. S.W. of, RICHARD SAYS

IBL06 - Seaforth Can.

IBL07 - LANA PASSAGE.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 38 of 43

Ocean Sciences Division, Institute of Ocean Sciences															Page 38 of 43	
Month <u>July</u>				Year <u>2011</u>				Ship <u>F.V. Viking Storm</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
3	IBCO8	18:50	BE	Bottle		334	52 7.991	127 52.446	520	150						
		18:59	EN				52 8.022	127 52.503								
		19:01	BE	CTD		335	52 8.032	127 52.523	7500	250		1				
		19:16	EN				52 8.071	127 52.631	7500						BOT 8 10m NORTON	
		19:23	BE	Tranv.		336	52 7.670	127 52.682	7500							
		19:53	EN				52 6.509	127 54.680	359						SURFACE Tow	
3	IBCO9	20:43	BE	CTD		337	52 1.138	127 55.038	240	222		1				
		20:56	EN				52 1.289	127 54.926							BOT 8 10m NORTON	
		20:58	BE	Bottle		338	52 1.307	127 54.881	222	150						
		21:06	EN				52 1.336	127 54.892								
		21:13	BE	Tranv.		339	52 0.945	127 55.194	244	0						
		21:43	EN				51 58.775	127 56.216							SURFACE Tow	
3	IBCP0	22:15	BE	Bottle		340	51 54.251	127 54.050	142	130						
		22:33	EN				51 54.300	127 53.937	144							
		22:35	BE	CTD		341	51 54.312	127 53.890	144	130		1				
		22:42	EN				51 54.344	127 53.797	146						BOT 8 10m NORTON + chl.	
		22:50	BE	Tranv.		342	51 54.508	127 52.750	192	0						
		23:20	EN				51 55.807	127 49.180							SURFACE Tow	

Cast Type:

BOT = Bottle cast, no CTD

USW = Sea Water Loop

MOR = MOCAS

Bottle Firing Method:

1 = Time Code

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

IB008 - Fished Channel off Johnson P. ... EXTENSIVE
STRONG TIDE, FLOTTING ON FRED OR SOMETHING DISPLAY.

IB008 - Fished Channel, 1.5 KNOT TIDE

IB009 -

IB010 - Fished CP AT River CN INTERSECTION

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 39 of 43

Month <u>July</u>		Year <u>2011</u>		Ship <u>F.V. Victoria</u>		Cruise ID <u>2011-57</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
4	IBCL	00:11	BE	CTD		343	51 52.15	127 54.58	275	250					
		00:27	RE				51 52.259	127 54.518							Bot @ 10m: Nuts & chl
		00:28	BE	Bongo		344	51 52.291	127 54.505	280	150					
		00:36	RE				51 52.350	127 54.429	283						
		00:43	BE	Trans.		345	51 51.908	127 54.346	255						
END OF DAY		01:13	RE				51 49.556	127 54.22	202						SURFACE TOW
4	IBCL	02:57	BE	CTD		346	51 31.05	127 52.49	148	135		1			Bot @ 10m: nuts & chl
		13:05	RE				51 31.074	127 52.534	144						
		13:07	BE	Bongo		347	51 31.083	127 52.541	144	135					
		13:15	RE				51 31.115	127 52.590	144						
		13:22	BE	Trans.		348	51 30.526	127 52.501	144						
		13:52	RE				51 28.199	127 51.571	160						SURFACE TOW
4	QCS007	14:29	BE	Bongo		349	51 23.44	127 52.38	113	100					
		14:35	RE				51 23.44	127 52.44							
		14:38	BE	CTD		350	51 23.45	127 52.50	113	100					
		14:44	RE				51 23.45	127 52.60							Bot @ 10m: Nuts & chl
		14:51	BE	Trans.		351	51 22.91	127 52.87	109						
		15:21	RE				51 20.503	127 54.147	140						SURFACE TOW

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

- ① Fire - Hbr - R.
- ② River Inlet -
- ③ River Inlet
- ④ Gordon Ch.

This page is for any notes or observations

IBL12 - 5. Fire - Hbr So. NO SWELL, RIPPED SEAS, SW 30-40 STORM APPROACHING.

QCS004 - OFF DOGOUT Rk, JUST SOUTH OF RIVER INLET.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 40 of 43

Month <u>July</u>		Year <u>2011</u>		Ship <u>F.V. N. King Stearn</u>		Cruise ID <u>2011-37</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
4	QCSD08	16:03	BE	CTD		352	51 15.58	127 53.39	130	120		1			Bot @ 10m MDS + chl.
		16:10	RU				51 15.66	127 53.42							
		16:12	BE	Bongo		353	51 15.69	127 53.43	130	120					
		16:19	RU				51 15.78	127 53.50							
		16:27	BE	Trawl		354	51 15.24	127 53.50	131	15					15m Trawl
		16:57	RU				51 12.943	127 53.598	141						
4	QCSD09	18:24	BE	Bongo		355	51 1.7	127 57.149	135	125					
		18:34	RU				51 1.736	127 57.139	136						
		18:37	BE	CTD		356	51 1.745	127 57.112	136			1			Bot @ 10m MDS + chl.
		18:45	RU				51 1.765	127 57.077	137						
		18:50	BE	Trawl		357	51 1.402	127 56.316	134	0					SURFACE Trawl
		19:20	RU				51 00.343	127 57.043	135						
4	QCST01	20:05	BE	CTD		358	50 57.666	127 45.554	245	250		1			130T @ 10m MDS + chl.
		20:20	RU				50 57.672	127 45.672	211						
		20:22	BE	Bongo		359	50 57.672	127 45.695	210						
		20:30	RU				50 57.661	127 45.749	197						
		20:37	BE	Trawl		360	50 57.397	127 44.896	322	0					SURFACE Trawl
		21:07	RU				50 56.228	127 41.709							

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

QCSD08 - SOUTH PASSAGE, $\frac{1}{4}$ SWELL, RIPPED SEAS, OCCASIONAL WHITECAPS.

QCST01 - QUEEN CHARLOTTE STRAIT, PINE ISLAND.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 41 of 43

Month <u>July</u>				Year <u>2011</u>			Ship <u>F.V. Viking Storm</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
4	QCST02	22 03	BE	Bongo		361	50 51.252	127 32.053	134	125					
		22 09	EN				50 51.200	127 32.109	119						
		22 12	BE	CTD		362	50 51.164	127 32.160	108	100					
		22 17	EN				50 51.110	127 32.209	90						
		22 23	BZ	Trawl		363	50 50.86	127 31.325	180						
		22 33	EN				50 49.701	127 27.56	228						
4	QCST03	23 32	BE	CTD		364	50 52.94	127 22.304	146	130					
		23 40	EN				50 52.955	127 22.447	135						
		23 42	BE	Bongo		365	50 52.962	127 22.457	130	120					
		23 48	EN				50 52.981	127 22.480	123						
		23 58	BE	Trawl		366	50 52.527	127 22.132	151						
		00 28	EN				50 50.497	127 20.904	150						
5 END OF DAY															
5	QCST04	13 06	BE	CTD		367	50 47.247	127 23.551	307	250					
		13 18	EN				50 47.344	127 23.825	222						
		13 20	BE	Bongo		368	50 47.363	127 23.864	310	160					
		13 28	EN				50 47.347	127 24.019	316						
		13 36	BE	Trawl		369	50 47.009	127 23.690	280						
		14 06	EN				50 45.464	127 21.858	332						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

BLST03 - Overcast, Rain, Flat Calm, Low Cloud.

BLST04 - BCSP, off Port Habor.

17:15 - TARGET OPERATIONAL SHOT DOWN.
(5:15 PM)

SR 10-15 Light winds.

BCST, July 5 - WEATHER PREDICTION, SR 10-15

BLST04 - Flat Calm

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 42 of 43

Month <u>Jan</u>				Year <u>2011</u>			Ship <u>R/V. Viking Seam</u>				Cruise ID <u>2011-37</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
5	QCS05	14:45	BE	Bottle		370	50 42 247	127 17.068	109	95					
		14:52	EN				50 42 252	127 17.109	108						
		14:55	BE	CTD		371	50 42 228	127 17.094	109	95		1			BOT 610m NUTS+CHL
		15:00	END				50 42.219	127.17.142	107						
		15:07	BE	Trans.		372	50 42 44	127 16.460	130						SURFACE TOW
		15:37	END				50 43.73	127 13.482	194						
5	QCS06	16:05	BE	CTD		373	50 44.775	127 10.505	146	150		1			BOT 610m NUTS+CHL
		16:14	EN				50 44.781	127 10.709	178						
		16:17	BE	Bottle		374	50 44.792	127 10.859	178	150					
		16:24	END				50 44.852	127 11.119	181						
		16:33	BE	Trans.		375	50 44.772	127 10.408	175	15					15 m Tow
		17:03	END				50 44.355	127 07.386	137						
5	QCS07	17:46	BE	Bottle		376	50 49.44	127 07.945	140	130					
		17:55	END				50 49.448	127 08.083							
		17:56	BE	CTD		377	50 49.451	127 08.092	140	130		1			BOT 610m NUTS+CHL
		18:03	END				50 49.495	127 08.179	140						
		18:09	BE	Trans.		378	50 49.301	127 7.455	150						
		18:39	END				50 48.246	127 4.834	156						

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

QC8T05 - off (For Hagg) Pearl Lagoon
Pierport

QC8T06 - Nemo Is, South

QC8T07 - Nemo Is, South. Group of Dolphins spotted heading South

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 43 of 43

Month <u>July</u>				Year <u>2011</u>			Ship <u>F.V. Nereus Star</u>			Cruise ID <u>2011-37</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
<u>5</u>	<u>QCST08</u>	<u>19:30</u>	<u>BS</u>	<u>CTD</u>		<u>379</u>	<u>50 44.391</u>	<u>126 54.578</u>	<u>96</u>	<u>85</u>		<u>1</u>			<u>BOT @ 10m nort chl.</u>
		<u>19:35</u>	<u>BS</u>				<u>50 44.425</u>	<u>126 54.674</u>	<u>104</u>						
		<u>19:38</u>	<u>BS</u>	<u>Bongo</u>		<u>380</u>	<u>50 44.445</u>	<u>126 54.704</u>	<u>129</u>	<u>85</u>					
		<u>19:42</u>	<u>BS</u>				<u>50 44.483</u>	<u>126 54.789</u>	<u>121</u>						
		<u>19:50</u>	<u>BS</u>	<u>Trawl</u>		<u>381</u>	<u>50 44.294</u>	<u>126 54.115</u>	<u>117</u>	<u>Ø</u>					<u>SURFACE TOW</u>
		<u>20:20</u>	<u>BS</u>				<u>50 42.482</u>	<u>126 54.558</u>	<u>175</u>						
<u>5</u>	<u>QCST09</u>	<u>21:01</u>	<u>BS</u>	<u>Bongo</u>		<u>382</u>	<u>50 43.773</u>	<u>126 46.593</u>	<u>109</u>	<u>100</u>					
		<u>21:07</u>	<u>BS</u>				<u>50 43.826</u>	<u>126 46.613</u>	<u>108</u>	<u>100</u>					
		<u>21:09</u>	<u>BS</u>	<u>CTD</u>		<u>383</u>	<u>50 43.859</u>	<u>126 46.609</u>	<u>109</u>	<u>100</u>		<u>1</u>			<u>BOT @ 10m nort chl</u>
		<u>21:15</u>	<u>BS</u>				<u>50 43.922</u>	<u>126 46.593</u>	<u>110</u>						
		<u>21:20</u>	<u>BS</u>	<u>Trawl</u>		<u>384</u>	<u>50 43.553</u>	<u>126 46.248</u>	<u>113</u>						<u>SURFACE TOW</u>
		<u>21:51</u>	<u>BS</u>				<u>50 41.608</u>	<u>126 45.944</u>	<u>127</u>						
<u>5</u>	<u>QCST10</u>	<u>22:27</u>	<u>BS</u>	<u>CTD</u>		<u>385</u>	<u>50 38.974</u>	<u>126 49.928</u>	<u>105</u>	<u>95</u>		<u>1</u>			<u>BOT @ 10m nort chl</u>
		<u>22:30</u>	<u>BS</u>				<u>50 38.965</u>	<u>126 49.901</u>							
		<u>22:31</u>	<u>BS</u>	<u>Bongo</u>		<u>386</u>	<u>50 38.956</u>	<u>126 49.871</u>	<u>106</u>	<u>95</u>					
		<u>22:37</u>	<u>BS</u>				<u>50 38.896</u>	<u>126 49.691</u>	<u>98</u>						
		<u>22:44</u>	<u>BS</u>	<u>Trawl</u>		<u>387</u>	<u>50 38.36</u>	<u>126 49.06</u>	<u>103</u>	<u>Ø</u>					<u>SURFACE TOW</u>
		<u>23:14</u>	<u>BS</u>				<u>50 36.353</u>	<u>126 46.003</u>	<u>133</u>						
<u>— END OF SURVEY —</u>															

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

QCST08 - QCST, SALMON CHAIRMAN
QCST09 - QCST, OFF BRUGATON ACCH.
QCST10 - QCST, BLACKISH SP.

- END OF SURVEY -